HPLABEL: A PROGRAM AND MICROFONT FOR THE GENERATION OF DATE/LOCALITY LABELS USING A LASER PRINTER[1]

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ABSTRACT: A computer program for the direct generation of date/locality labels for pinned insect specimens is described. These labels are compared with those produced by offset printing and by reduced photocopying.

One of the major bottlenecks in the curation of insect collections is the generation of date/locality labels for specimens. For pinned and pointed specimens, these labels have to be small (approximately 25 characters per inch), permanent, and legible. Most insect collections now use a two-step process to produce labels. First, labels are printed either with a typewriter or a printer in a standard font (usually 10-12 characters/inch) and a paste-up board is assembled. A "stat" is prepared by photographically reducing the board to produce a master of the required size when the paste-up board is filled. Labels are then offset printed onto high quality paper (i.e. high rag content, acid neutralized). These labels are of excellent quality (Fig. 1d) but labels cannot be efficiently generated until a paste-up board is filled, which can result in a delay of many months in the preparation of the final labels. Some collections produce labels only 2 or 3 times a year. In addition, offset printing usually has a minimum run of at least 50 copies per original, resulting in many wasted labels for small lots of specimens.

These constraints on the efficient generation of date/locality labels have no doubt resulted in the loss of a great deal of valuable ecological and distribution data. Very general labels are often used, giving only a minimum of information, e.g. U.S.A., OR: Benton Co., June 1988, D.C. Darling. Often much more detailed information is contained in field notes, but these data often fail to become associated with specimens because of inefficiencies in label production, and are ultimately lost. One solution is to produce "generic" labels for collecting localities and to add a second label with more specific ecological information, such as floral associations, hosts, or collecting method. There are at least two problems with this approach: double labelling is time consuming and affords an additional opportunity for mislabelling; and insect speci-

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mens can quickly become cluttered with labels.

Many collections and collectors have experimented with producing date/locality labels with reducing photocopy machines. When printed on high quality paper these labels have the required permanence and can be produced quickly, but usually with considerable wastage of paper. Two reductions of 64% are necessary to produce labels of the correct size and the final labels lack the clarity of offset printed labels (Fig. 1b,c). These labels are generally regarded as unacceptable by major museums as a standard curatorial procedure.

Computer programs that have been published for generating insect labels on a microcomputer are either very basic (Kissinger 1982) or primarily concerned with the mechanics of generating multiple copies of labels and storing and managing files of labels (Ellis *et al.* 1985). These programs streamline the production of output suitable for assembling paste-up boards but do not generate labels directly. Labels must still be reduced for offset printing or with a photocopy machine.

Laser printing technology is ideally suited to the production of labels

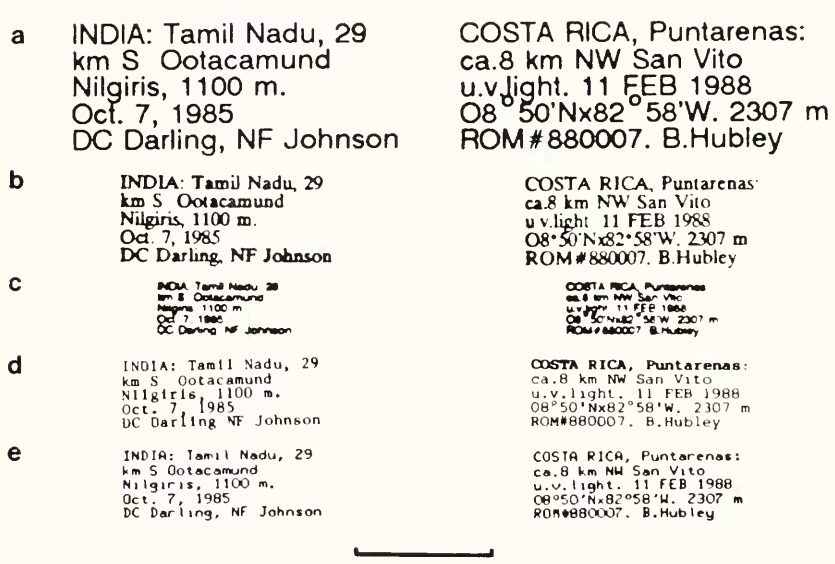

Figure 1: A comparison of date/locality labels. a, laser printer with smallest commercially-available font, 6 point Helvetica. b, HP laser printer (10 point Times Roman) and two photocopy reductions of 64% (40% of original) with Kodak Ektaprint 150. c, laser printer (6 point Helvetica) and two photocopy reductions of 64% (40% of original) with Kodak Ektaprint 150. d, offset printing. e, HPLABEL. Scale line, 1 cm.

for pinned or pointed specimens. The printing process results in extremely high quality labels which should have excellent long term permanence under normal storage conditions. There is, however, some concern about the permanence of laser printed labels for specimens stored in alcohol or when labels are exposed to various reagents and high temperatures [see Insect Collection News, 2(2):26-27 (1989)]. Microcomputers and laser printers (LaserJet series II) are quickly becoming a standard feature of most museum and university departments. Unfortunately, the smallest available fonts (6 point) are too large to directly generate date/locality labels (Fig. 1a). Alternatively, commercially-available desktop publishing programs are available to generate labels directly. These tend to be rather cumbersome, requiring considerable word processing skills, and cannot be incorporated easily into programs for generating multiple copies of individual labels. For example, Fancy Font can generate high quality 3 point labels. We present here an edited microfont and computer program (HPLABEL) for the direct production of date/locality labels using an IBM-PC (or compatible) microcomputer and Hewlett-Packard LaserJet Series II printer.

The microfont is an edited version of a public domain font supplied to us by Henry Spencer (Department of Zoology, University of Toronto). A BASIC program was written by CP to streamline the generation of labels. The program uses either BASICA or GWBASIC and prompts the user for up to 5 lines of label data. After previewing the label, the user is asked how many copies of the label are required. The program then prompts for additional labels. The labels are stored in a buffer and printed to efficiently use label paper.

Figure 1 compares labels produced by HPLABEL (Fig. 1e) with standard labels generated by offset printing (Fig. 1d) and with labels generated by a reducing photocopy machine (Fig. 1c). Although not as sharp as offset printing, we think that the HPLABELS are acceptable for the routine labelling of specimens. These labels are clearly superior to those produced by a 40% reduction of either 10 point (Fig. 1b) or 6-point fonts (Fig. 1c). With these reduced labels the letters run together making the labels difficult to read and the labels are either too large (Fig. 1b) or too small and illegible (Fig. 1c).

This program is currently being used for label production in the Department of Entomology, Royal Ontario Museum. A copy of the font, program and operating instructions is available by sending a formatted 5.25 inch diskette to DCD.

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LITERATURE CITED

Ellis, K. A., Surgeoner, G. A. and Ellis, C. R. 1985. Versatile program for generating insect labels on an IBM-PC microcomputer. Can. Ent. 117: 1447-1448.

Kissinger, D. G. 1982. Insect label production using a personal computer. Proc. Ent. Soc. Wash. 84: 855-857.

BOOK REVIEW

WORLD CROP PESTS. W. Helle, Editor in chief. 1989. Elsevier Publ. Co., Amsterdam, The Netherlands, and P.O. Box 1663, Grand Central Station, New York, NY 10163

VOL. 2. APHIDS: THEIR BIOLOGY, NATURAL ENEMIES, AND CONTROL. A.K. Minks & P. Harrewijn, eds. 1989. Vol. 2A 450 pp., $176; Vol. 2B 382 pp., $169; Vol 2C 322 pp., $145.

Vol. 2A contains chapters on morphology and systematics; anatomy and physiology; reproduction, cytogenics, and development; biology; aphids and their environment; evolution; and structures of population and species.

2B includes two long chapters on techniques and natural enemies.

2C also contains just two chapters: Damage by aphids and control of aphids. The latter includes, among the nine subjects, biological control, host plant resistance, and behavioral modification. The black & white photographs, tables and graphs are not numerous, but are of high quality. Comprehensive lists of references follow each chapter. Slight deficiencies in coverage of North American papers are more than compensated for by the inclusion of European papers that are rarely seen here.

The series title implies that these large-format (8 1/2″ x 12″) books may only be of interest to economic entomologists. However, a broad range of subjects, by a large number of world authorities, is included. The series will be useful reference to workers in many subdisciplines of entomology, in addition to those concerned with arthropod control.

The sample (Vol. 2C) that I received contains up-to-date reviews and syntheses of the vast world literature. The scope and depth are most ambitious. The cost is not as high as it appears because the large format includes approximately 30% more information per page than the average (6″ x 9″) book.

Volumes 1 (Spider mites) has also been published, and several others are in preparation.

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